

EMR feature used to develop the model.

Feature group	Feature number	Feature description (12 month clinical history before ED discharge)
Encounter history	104	Visit counts of different encounter types (E/O/I/P/R) * The accumulated length of hospitalized stay Counts of historical chronic disease diagnoses Counts of total and no redundant total radiographic and laboratory tests, and outpatient prescriptions
Demographics	12	Female, male Income, education, payer Age group is defined by age at ED admission (0, 1-5yr, 6-12yr, 13-18yr, 19-34yr, 35-49yr, 50-65yr, 65+yr) **
Facility	12	Different facilities
Procedure	2	Counts for different primary procedure and secondary procedure
Chronic disease condition	1	Counts for chronic disease diseases
Diagnosis	10	Counts for primary diagnosis and secondary diagnosis
Laboratory test	2	Counts for different laboratory test results
Outpatient prescriptions	9	Counts for different outpatient prescriptions

* Encounter type descriptions: E-Emergency, O-Outpatient, I-Inpatient, P-Pre admission, R-Recurring admission, **yr-year